



## Filing Receipt

**Received - 2021-09-09 05:27:13 PM**  
**Control Number - 52373**  
**ItemNumber - 121**

**PROJECT NO. 52373**

**REVIEW OF WHOLESALE  
MARKET DESIGN**

**§ PUBLIC UTILITY COMMISSION  
§ OF TEXAS**

**DEMAND CONTROL 2 SERVICE'S COMMENTS TO PUC STAFF'S QUESTIONS**

**EXECUTIVE SUMMARY**

Demand Control 2 Services provides 6 recommendations in response to Staff's Questions regarding Demand and Load Response. Although DC2 Services does not address every question the Staff posed, DC2 Services provides input for both immediate actionable recommendations (Items 1, 2, 3 (part), 4, and 5) and intermediary programs to develop (Items 3 (part) and 6). Generally, DC2 Services suggests the following obtainable goals:

1. Require ERCOT Staff to include the procured Load Resources in the additional 6500 MW of ancillary service for RRS and Non-Spin (such additions authorized in OBDRR 031).
2. Reincorporate non-controllable Load Resources in the deployment for ancillary services. This process, successfully used prior to 2014, includes a telephone call from the ERCOT operator to the Load Resource operator. [DC2 Services has attached the process used to achieve this goal – *ERCOT Business Practice, Non-Spinning Reserve Service Deployment and Recall Procedure, Effective December 1, 2013.*]
3. Waiting for a prescribed grid-level emergency alert call for Texans to conserve is not the most effective method to encourage Texans to conserve. It is a mindset that needs to be reset. In the more immediate term, there needs to be an immediate substitute for the current "Conservation Alert" message. Then, DC2 Services suggests establishing a robust campaign with effective messaging to encourage and promote the public's awareness, need, duty, and action to conserve electricity. This would include the communications for public appeals for voluntary load reductions.
4. Embrace the transparent ERCOT stakeholder process for the implementation of market changes, and utilize this streamlined process for vetting controversial market changes. The stakeholders can efficiently and effectively work in an expeditious manner to provide feedback and critical details to market changes. Comments suggesting the stakeholder process is burdensome and lengthy are reflective of the meetings schedule. The stakeholders are more than willing to meet more often than the normal schedule to facilitate these market changes. Commission workshops while informative do not provide the vigorous research and investigations into otherwise unknown consequences of market changes.
5. Move the Emergency Response Service (ERS) products (10-minute and 30-minute) before reaching Energy Emergency Alert Level 1 (EEA 1). [This requires a change to P.U.C. Subst. R. § 25.507 and a couple of ERCOT revision requests.]
6. Create relationships with State agencies, including Universities to implement programs to achieve necessary energy reductions.

Demand Control 2 Services (DC2 Services) appreciates the Public Utility Commission of Texas (Commission or PUC) leaders and its Staff's diligence in understanding and exploring opportunities for the successful balancing of the Electric Reliability Council of Texas (ERCOT) grid reliability and resiliency with its competitive markets for the ultimate benefit of the ERCOT customers. DC2 Services was unable to fully express this information in the requested page limit. We hope the Commission will find all of this information to be a constructive resource.

DC2 Services is a boutique targeted consulting and services firm for some of the largest competitive retail electric providers in the United States. DC2 Services participates in serving public and private companies and retail electric providers in every electric competitive market, be it an independent system operator (ISO) region or regional transmission organization (RTO), including assisting start-up market participants, performing market and operational analysis, providing strategies, assessing market risk, and participating in the stakeholder processes, *inter alia*. DC2's best-in-class proprietary software, VERGOS™ (Virtual Energy and Reliability Grid Operations System), is our primary a tool to model, calculate, and verify every possible scenario it has been taken to task.

Many have deemed ERCOT, an energy-only market, as the best competitive retail and wholesale electric markets in the world. Prior to the February 2021 winter weather events (February Event), ERCOT conservatively operated with a reserve margin ranging from 10.1% (2008) to 13.75% (2020). The debilitating and devastating February Event not only cost Texas hundreds of lives - one-too-many precious lives - it exposed vulnerabilities of the ERCOT grid operations and systems. With the Texas Legislature in session during the February Event, all eyes were on the actions of the State leaders to remedy the newly Declared Disaster, which was compounded by the already Declared Disaster of the global COVID-19 pandemic – hopefully a once in a lifetime declared disaster upon another declared disaster period in Texas history.

Now, all eyes are on the Public Utility Commission of Texas to resolve and command solutions from a decaying fossil-fueled era of aging traditional generation to embracing advanced technology developments for fossil fuel power plants and sustainable resources, albeit sometimes non-dispatchable renewable resources, acceptance of all load resources tallied for ancillary services, overdue orchestration of existing distributed generation, coordination of demand response programs, and new technologies demanded by corporate and global embraced

commitments of responsibilities and promises to environmental, social, and (corporate) governance (ESG)<sup>1</sup> goals for a carbon neutral world for the future of all. In fact, it is the broadly adopted ESG agenda that drove businesses and investors to Texas. The opportunity to be part of the Texas Wind Rush, whether as a builder, investor, seller, buyer, employer, or employee, was enabled by the fundamental foundations of ESG and the growing targeted financial investments. With ESG in mind, many companies, including major investors, are pouring money into the solar industry in Texas.

### **Item 1: Include Procured Load Resources in Additional A/Ss**

The new Commissioners took quick market action to stabilize the grid by permitting ERCOT Staff to increase its procurement of ancillary services (Reserve Response Service (RRS) and Non-Spin) to an additional 6,500 MW regardless of cost. However, ERCOT Staff has yet to include the 1300+ MW of Load Resources it has *procured* for such additional ancillary services from Load Resources as a portion of the additional 6,500 MW – despite the multiple requests for ERCOT Staff to do so. Furthermore, ERCOT Staff has yet to provide a reason it has not included Load Resources it has purchased in the permitted 6,500 MW of additional ancillary services.

DC2 Services respectfully requests the Commission to require ERCOT Staff to include all procured Load Resources in the calculation for the additional ancillary services (permitted under the new OBD RR 031<sup>2</sup> until and unless ERCOT Staff brings to the Commission a sound and solid reason for doing so (and provides stakeholders an opportunity to respond to ERCOT Staff's claims).

### **Item 2: Reinstate NCLRs for A/Ss**

There is a long history regarding the removal of non-controllable Load Resources (NCLRs) in the deployment for ancillary services. Prior to 2014, the ERCOT grid relied on NCLRs for

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<sup>1</sup> ESG is the environmental, social, and governance is a methodology to express accountability of sustainability and ethics in all three categories for corporations, including non-profits, other businesses, and even governments around the world. As stated by Financial Times, “ESG (environmental, social and governance) is a general term used in capital markets and used by investors to evaluate corporate behavior and to determine the future financial performance of companies”.

See, for examples, <https://esg.org/>;

the United Nations website: <https://www.unglobalcompact.org/take-action/action/private-sustainability-finance>; and [https://en.wikipedia.org/wiki/Environmental,\\_social\\_and\\_corporate\\_governance](https://en.wikipedia.org/wiki/Environmental,_social_and_corporate_governance).

<sup>2</sup> OBD RR 031, *Change Non-Spinning Reserve Service Deployment* (July 1, 2021).

ancillary services for the reliability for the grid. A single telephone instruction to the NCLR owner was needed for the NCLR to participate in the ancillary services market. In 2013, the Future Ancillary Services Team (FAST) was created at ERCOT, and so **began** (the project was never fully completed) the market redesign for ancillary services. The one item that made it through the project was the removal of NCLRs for Non-Spinning Reserve Service deployment and recall.

Besides the need for human intervention (a telephone call given instruction), there are no good reasons to not bring NCLRs back into the mix to provide ancillary services, particularly Non-Spin and Responsive Reserve Service (RRS). Given the requested increase of 6500 MW of additional ancillary services, it is prudent to reincorporate non-controllable Load Resources in the deployment for ancillary services. The process, successfully used prior to 2014 - 2015, to implement this change is, at a minimum, outlined, if not prescribed, in the *ERCOT Business Practice, Non-Spinning Reserve Service Deployment and Recall Procedure, Effective December 1, 2013*. DC2 Services has attached this former detail procedure to illustrate the access to the information to develop a process for implementing ancillary service deployment procedures for NCLRs. We urge the Commission to immediately instruct ERCOT Staff to develop an NPRR to reflect this necessary change.

### **Item 3: Conservation Messaging Campaign**

Naturally, Texas citizens and leadership are a bit gun shy when there is a *hint* of scarcity in the market. When there was a hint of a grid constraint earlier this summer, the news media jumped at the opportunity to narrowly focus on the call for conservation as if the sky was falling. The call for conservation was indeed interpreted as an alarm – albeit, a false alarm – that the ERCOT grid was ready to collapse. And, with the help of the media, scared Texans unnecessarily relived some of the cruel moments in time during the February Event.

That said, Demand Control 2 Services visualizes conservation as the first and foremost, and fortunately, the easiest, step to stabilizing the ever-increasing demand on the ERCOT grid in the name of reliability and resiliency of the grid. What the Commission must conquer and overcome is the preconceived notion that a request for conservation during peak times, much less conservation all the time by all consumers, does not equate to a desperate call for action to keep the lights from going out. The Commission, with the assistance of others, must establish a

campaign for conserving energy consumption as a trait all good Texans want to share with other Texans.

Conservation is far from a new concept. Conservation is second nature to many, if not most, Texans, whether it is conserving natural resources, such as water and parklands; simply recycling discarded product containers, even ink cartridges; and reusing or repurposing household items such as wine corks and grocery bags. Electricity is no exception. However, conservation of electricity in the form of an emergency alert announce takes on many negative connotations, particularly in light of the February Event. Instead of frightening Texans when the conservation alarm is sounded, *we* need to make Texans eager and proud to conserve energy. The campaign messaging needs to resonate as a normal activity all the time, during the midst of summer heat and winter chills, but, particularly in times when there are extreme weather periods.

Waiting for a prescribed grid-level emergency alert call for Texans to conserve is not the most effective method to encourage Texans to conserve, in DC2 Services' opinion. It is a mindset that needs to be reset. Regardless of the actual campaign, it is important to note:

1) The conservation levels reached during the recent calls were provided by the commercial and industrial consumers. It is truly naïve and misplaced to assume or accept that the reduction in load was primarily caused by residential customers.

2) Despite air-conditioning (A/C) being one of the dominate electricity consumption devices in a typical household, asking households to turn their thermostats to 78 degrees in the heat of the day is not providing the most efficient means to conservation. *Requesting* households to set their homes to 78 degrees in and of itself does not mean they will. When it is hot outside, we want it cool inside. However, if the messaging was about closing window blinds (as the first measure), it is more conceivable that more customers will take part in a call for conservation. We are not asking them to be uncomfortable in their homes. We are asking that they simply close their blinds for a period. This type of action significantly reduces their A/Cs' cycling, and, hence, directly provides the grid with greater demand response.

3) Pool pumps use likely the second most electricity in a household (with swimming pools). Most, if not all, have timers. The conservation campaign should target consumers with pool pumps to adjust them to run after 9:00 pm. It not a matter of the time of day the pump runs, it is the fact that most run once a day during the summer. Education is the key factor here. Pool

pump owners need to understand the significance of running off-peak, as well as checking their timers, say monthly, to ensure that short power bleeps, a power outage, or day-light savings keep the timers set at the correct time.

Texans are a proud bunch. Once a worthwhile campaign kick-starts, Texans are ready for the challenge. For example, once was the day that it was legal to drink and drive. Picture the pickup driver taking the last swig from a Lone Star beer can at the stop light, crushing the can, and throwing it in the back of her pickup truck bed (post-littering era, indeed, or recycling the aluminum). As more vehicles travelled those same roads, including the drinking drivers, the more accidents occurred. It became dangerous to others to drink and drive. Now, for the vast majority of Texans, even those who used to drink and drive, no longer drink while driving. It was a very successful campaign: “Don’t drink and drive”. We can do the same with challenging Texans to do what is right, what is good for them and others, and what needs to happen with conserving electricity as long as we get the education and messaging right.

For example, currently the ERCOT Protocols require ERCOT Staff to issue a public “Conservation Alert” in EEA 1.<sup>3</sup> However, the National Energy Reliability Council (NERC) uses the language for “public appeals for voluntary load reductions”.<sup>4</sup> The two different tones for the same action produce separate and distinct public reactions. This is the type of messaging and campaigning that needs to be addressed to produce the most positive, enthusiastic reaction for Texans.

#### **Item 4: Embrace the ERCOT Stakeholder Process**

To reestablish ERCOT as the best wholesale and retail competitive electric market in the world, the State leadership, including the Commissioners, must realize the critical component of a transparent ERCOT stakeholder process. Repeated misconceptions that the stakeholder process at ERCOT is burdensome and takes too long to develop or correct a solution is a very far stretch from the truth. The stakeholders are the ones with the greatest incentives to work together to find the best solutions. The technical expertise, institutional knowledge of what worked and what did not, the differing market participant perspectives, the collaboration, deliberations, are second to none.

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<sup>3</sup> “Unless a media appeal is already in effect, ERCOT shall issue an appeal through the public news media for voluntary energy conservation”. ERCOT Protocol § 6.5.9.4.2(2)(a)(vi).

<sup>4</sup> NERC Reliability Standard EOP-011-1, B.R2.2.2.4 (Apr. 1, 2017).

Bear in mind, it was not the ERCOT market that failed in February. It was the governmental and quasi-governmental interference with the market forces, along with poor planning based on the weeks of the forecasted unprecedented weather. Albeit, there were many cascading circumstances beyond human-control.

To effectively redesign elements of the ERCOT markets in a few months is not only a colossal undertaking, but it will also take years to play out, adjust and modify, and reap the intended benefits. Likewise, valuable lessons will be learned which will highlight faults in tandem with broaden the pool of unforeseen solutions.

**Staff Question 5. What changes should be made to non-residential load-side products, programs, or what programs should be developed to support reliability in the future?**

**Item 5: Move ERS After OCN**

Demand Control 2 Services respectfully requests that the Emergency Response Service program (ERS)<sup>5</sup> be deployed prior to EEA 2. Doing such will enable improved and more reliable operations of the ERCOT critical infrastructure.

There are many companies that installed (some even own) behind-the-meter generation (distributed generation (DG)) based on economics including payments for participating in the ERS programs. These economics are not playing out today because political and social environments are obstructing the well-thought-out design for entering any level of “emergency”, much less EEA 2 when ERS generation is used by the grid for reliability. In other words, ERCOT has not been able to reach EEA 2 because of political pressures.

Under the ERCOT Protocols, to deploy the ERS resources requires a call for conservation first (which is at the EEA 1 level). As discussed above, calling for conservation is not well received or perceived by the Texas leadership or many Texans *at this time*. It invokes the fear that the system is about ready to crash. Such misperception is costing ratepayers money, reducing payments to companies with certain available generation, and reflects the deliberate governmental

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<sup>5</sup> As defined in the ERCOT Protocols, ERS is an “emergency service consistent with P.U.C. SUBST. R. 25.507, Electric Reliability Council of Texas (ERCOT) Emergency Response Service (ERS), used during an Energy Emergency Alert (EEA) to assist in maintaining or restoring ERCOT System frequency. ERS is not an Ancillary Service.”

There are two ERS products: ERS-10 and ERS-30. ERS-10 is providing service within a ten-minute ramp period and ERS-30 is within a 30-minute ramp period.

market interference of procuring the additional 6500 MW of RRS and Non-Spin Ancillary Services. Until the conservation campaign is in effect, or even if after, ERS should be called upon prior to creating a state of panic.

Contrary to the claim by others, NERC Reliability Standards do not require ERCOT to proceed through each EEA level subsequently. NERC explicitly states:

**The Reliability Coordinator may declare whatever alert level is necessary, and need not proceed through the alerts sequentially.**<sup>6</sup>

P.U.C. Substantive Rule § 25.507, §25.507. *Electric Reliability Council of Texas (ERCOT) Emergency Response Service (ERS)*, states that the:

purpose of this section is to promote reliability during energy emergencies through provisions that provide ERCOT flexibility in the implementation and administration of ERS,<sup>7</sup>

and

ERCOT shall procure ERS, a special emergency response service that is intended to be deployed by ERCOT in an Energy Emergency Alert (EEA) event.”<sup>8</sup>

On the other hand, ERCOT uses the Day-Ahead, Adjustment Period, and Real-Time processes to ensure that the minimum reliability standards are maintained. And, as stated in ERCOT Protocol 6.5.9.1, “It is anticipated that, with effective and timely communication, the market-based tools available to ERCOT will avert most threats to the reliability of the ERCOT System”.

DC2 Services recommends ERS be included in ERCOT’s market-based toolbox to reduce the possibility of reliability issues. A modification to the above Commission Rule and a nodal protocol revision request (NPPR) is necessary to move the ERS program prior to reaching an “emergency” level or to include it in EEA 1.<sup>9</sup> The best-case scenario would be to provide the ERCOT operators an additional tool to be available days in advance of a forecasted peak period.

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<sup>6</sup> NERC Reliability Standard EOP-011-1, Attachment 1-EOP-011-1, B.

<sup>7</sup> P.U.C. Subst. R. § 25.507(a).

<sup>8</sup> P.U.C. Subst. R. § 25.507(b).

<sup>9</sup> There are also other revision requests, such as Other Binding Document Revision Requests (OBDRRs), that are like needed to implement this change.

For example, ERCOT issues an OCN (operating condition notice)<sup>10</sup> *usually* days before an event. Part of the NPRR would allow ERCOT to notice ERS-10 and ERS-30 products days in advance and then call on them. This certainly can occur before any emergency alert level is reached.<sup>11</sup>

In addition to the revision for ERS to be noticed and called after the OCN but before EEA level 1 is reached, the Protocol language would include a change to the order ERS is called upon before reaching EEA1 and during EEA 1. This will certainly relieve the confusion of any critical grid conditions.<sup>12</sup>

#### **Item 6: Coordinate Conservation Efforts with State Agencies/ities**

Finally, the NERC Reliability Standards, specifically calls for 1) “Public appeals for voluntary Load reductions” (as noted above), and 2) “Requests to government agencies to implement their programs to achieve necessary energy reductions, and 3) “Reduction of internal utility energy use”.<sup>13</sup>

These three concepts should be required in ERCOT. The first concept was addressed earlier in these comments. The second concept for Texas State agencies to implement their programs to achieve energy reductions assumes State agencies have such programs. We need to research, identify, and assist State agencies to participate in demand response programs. DC2 Service envisions this to be a longer and more detailed project, but, one that will inform and encourage State agencies’ participation in demand response. Furthermore, for example, Universities can develop such programs utilizing professors, faculty, students, course assignments, etcetera, to enhance the unlimited opportunities to reduce consumption during different periods of time. The third concept is one that we need to ensure is already taking place. DC2 Services suggests that the reduction of internal utility energy use programs be shared in order to develop the best set of programs for such.

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<sup>10</sup> The OCN is the first of three levels of communication issued by ERCOT in anticipation of a possible Emergency Condition. ERCOT Protocol 6.5.9.3.1(1).

<sup>11</sup> The exception would be if the PRC is declining at a point that ERS would no longer be relevant.

<sup>12</sup> It could be considered to add ERS deployment to the list in ERCOT Protocol 6.5.9.4.1, *General Procedures Prior to EEA Operations*.

<sup>13</sup> NERC Reliability Standard EOP-011-1, B.R2. 2.2.4, 2.2.5, and 2.2.6.

Demand Control 2 Services is grateful for the opportunity to respond to Commission Staff's direct, sound, and solid questions. Demand Control 2 Services appreciates the Commissioners and Staff for their continual search and implementation of market measures that can and will improve the Texas' wholesale and retail competitive electricity markets. We stand ready, willing, and able to assist in any way.

Respectfully submitted,

*Chris Hendrix*

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# **ERCOT BUSINESS PRACTICE**

## **Non-Spinning Reserve Service Deployment and Recall Procedure**

**Effective December 1, 2013**

**Version \_0.5**

**Document Revisions**

<b>Date</b>	<b>Version</b>	<b>Description</b>	<b>Author(s)</b>
03/30/2007	0.1	TAC approved version	
08/11/2010	0.2	Updated to reflect changes to protocol and Current system implementation	<b>Colleen Frosch John Dumas Resmi Surendran</b>
10/4/2010	0.3	Included Non-Spinning Reserve Service Deployment and Recall Procedure Revision Process	<b>Market Rules</b>
04/16/2012	0.4	Updated to synchronize with the Protocol requirements introduced by NPRR426, to change the deployment and recall trigger mechanisms, and to remove language covered by other Binding Documents	<b>Market Operations Support</b>
05/03/2012	0.4	TAC approved version. Effective 5/14/12	
11/07/2013	0.5	TAC approved version. Updated to reflect changes to Protocols pursuant to NPRR555, with new language grey-boxed pending implementation of NPRR555.	<b>ERCOT</b>

**Approval Authority**

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**Sign:** Colleen Frosch \_\_\_\_\_ **Date** 04-16-12 \_\_\_\_\_

**PROTOCOL DISCLAIMER**

This Business Practice describes ERCOT Systems and the response of these systems to Market Participant submissions incidental to the conduct of operations in the ERCOT Texas Nodal Market implementation and is not intended to be a substitute for the ERCOT Nodal Protocols (available at <http://www.ercot.com/mktrules/nprotocols/current>), as amended from time to time. If any conflict exists between this document and the ERCOT Nodal Protocols, the ERCOT Nodal Protocols shall control in all respects.

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## **1. Nodal Market Non-Spinning Reserve Service Deployment and Recall Procedure**

For any Non-Spinning Reserve (Non-Spin) Service that is not continually deployed to Security-Constrained Economic Dispatch (SCED) as part of a standing On-Line Non-Spin deployment, there are four situations that will cause Non-Spin to be deployed:

- Detection of insufficient capacity for energy dispatch during periodic checking of available capacity.
- Disturbance conditions such as a unit trip, sustained frequency decay or sustained low frequency operations.
- SCED not having enough energy available to execute successfully.
- When Off-Line Generation Resource providing Non-Spin are the only reasonable option available to the Operator for resolving local issues.

In each of these cases, the ERCOT operator will make the final decision and initiate the deployment. The ERCOT operator shall deploy Non-Spin in amounts sufficient to respond to the operational circumstances. This means that Non-Spin may be deployed partially over time or may be deployed in its entirety. If Non-Spin is deployed partially, it shall be deployed in increments of 100% of each Resource's capacity. To support partial deployment, ERCOT shall, following the Day-Ahead Market (DAM), rank, for each hour of the Operating Day, the Resources supplying Non-Spin in an economic order based on DAM Settlement Point Prices. Partial Non-Spin deployment and recall decisions shall be based on each Resource's economic cost order.

## **2. Non-Spin Deployment**

ERCOT may deploy Non-Spin, which has not been deployed as part of a standing On-Line Non-Spin deployment, under the following conditions:

- When  $(HASL - Gen) - (30\text{-minute load ramp}) < 0$  MW, deploy half of the available Non-Spin capacity.
- When  $(HASL - Gen) - (30\text{-minute load ramp}) < -300$  MW, deploy all of the available Non-Spin capacity.
- When  $PRC < 2500$  MW, deploy all of the available Non-Spin capacity.
- When the North-to-Houston (N\_H) Voltage Stability Limit Reliability Margin  $< 300$  MW, deploy Non-Spin (all or partial) in the Houston area as needed to restore reliability margin.
- When Off-Line Generation Resources providing Non-Spin are the only reasonable option available to the Operator for resolving local issues, deploy available Non-Spin capacity on only the necessary individual Resources.

If a condition other than those listed above indicates that additional capacity may need to be brought On-Line to manage reliability, operators will evaluate the system condition and deploy Non-Spin as needed if no other better options are available to resolve the system condition. Under emergency, the emergency process will govern the deployment of Non-Spin.

Following a Non-spin deployment, the following steps should be taken:

2.1. Off-Line Generation Resource reserved for Non-Spin

- The QSE will be sent a Resource specific Dispatch Instruction that Non-Spin has been deployed.
- The Dispatch Instruction must include the expected amount of *capacity* that will be available for SCED and the anticipated duration of the deployment.
- The QSE will ensure that the Non-Spin Ancillary Service Schedule telemetry for that unit has been reduced to zero within 20 minutes of the Dispatch Instruction.
- The QSE must have the Resource On-Line with an Energy Offer Curve and the telemetered net generation must be greater than or equal to the Resource's telemetered LSL multiplied by P1 where P1 is defined in the "ERCOT and QSE Operations Business Practices During the Operating Hour" within 25 minutes of the Dispatch Instruction.
- SCED will respond to the changes in Resource Status that are received by telemetry from the QSE.
- Once the Resource is On-Line it is Dispatched as any other Generation Resource including any provisions for processing generation less than the Resource's LSL.
- The Resource must, at a minimum, be capable of providing all the Non-Spin energy to SCED within 30 minutes of the Dispatch Instruction.

2.2. On-Line Generation Resource with an Energy Offer Curve

- For a Resource that *will not use power augmentation* to provide any portion of its Non-Spin Ancillary Service Resource Responsibility:
  - The QSE shall set the value of the Non-Spin Ancillary Service Schedule to zero within the 30-second window prior to the start of the delivery hour.
  - ERCOT will automatically calculate new HASL constraints for SCED using the telemetry of the Resource's Non-Spin Ancillary Service Schedule.
  - The total amount of capacity reserved on that Resource for Non-Spin shall be considered as a standing Non-Spin deployment Dispatch Instruction for the duration of the Operating Hour.
  - A Non-Spin deployment Dispatch Instruction from ERCOT is not required for standing Non-Spin deployments.
- For a Resource that *will use power augmentation* to provide a specific MW portion of its Non-Spin Ancillary Service Responsibility:

- The QSE shall set the value of the Non-Spin Ancillary Service Schedule to the appropriate value within the 30-second window prior to the start of the delivery hour.
- The QSE may set the value of the Non-Spin Ancillary Service Schedule equal to the MW amount of Non-Spin that will be provided via power augmentation; otherwise, the QSE may set the value of the schedule to zero.
- If the Non-Spin Ancillary Service Schedule is set to zero, then the total amount of capacity reserved on that Resource for Non-Spin shall be considered as a standing Non-Spin deployment Dispatch Instruction for the duration of the Operating Hour.
- If the Non-Spin Ancillary Service Schedule is set to a non-zero value, then the QSE will be sent a Resource specific Dispatch Instruction indicating that Non-Spin has been deployed for the total amount of the Non-Spin Schedule.
  - The Dispatch Instruction must include the expected amount of *capacity* that will be available for SCED and the anticipated duration of the deployment.
  - The QSE shall reduce the Resource's Non-Spin Ancillary Service Schedule to zero within 20 minutes following a deployment instruction.
- ERCOT will automatically calculate new HASL constraints for SCED using the telemetry of the Resource's Non-Spin Ancillary Service Schedule.
- The QSE must, at a minimum, ensure that the Normal Ramp Rate represented by the Resource's ramp rate curve is sufficient to allow SCED to fully Dispatch the Resource's Non-Spin Resource Responsibility within 30 minutes, regardless of whether or not the Resource uses power augmentation to provide the service.

### 2.3. On-Line Generation Resource with Output Schedules

- The QSE shall set the value of the Non-Spin Ancillary Service Schedule to zero within the 30-second window prior to the start of the delivery hour.
- ERCOT will automatically calculate new HASL constraints for SCED using the telemetry of the Resource's Non-Spin Ancillary Service Schedule.
- If the QSE is sent a Resource-specific Dispatch Instruction indicating that Non-Spin has been deployed:
  - The Dispatch Instruction must include the additional amount of *energy* (MW) that needs to be produced by the Resource and the estimated duration of the deployment.
  - For DSRs providing Non-Spin, as soon as the QSE receives the deployment, the QSE shall adjust the telemetry Output Schedule to reflect the Non-Spin deployment. A DSR QSE with a Load Resource that has provided Non-Spin will ensure that the Output Schedule is not reduced to reflect the Load

deployment if the Load Resource is part of the DSR Load that the Resource follows.

- For non-DSRs (with Output Schedules) providing Non-Spin, ERCOT shall increase the Output Schedule used in SCED by the difference between telemetered Non-Spin Ancillary Service Resource Responsibility and Ancillary Service Schedule to reflect the amount of Non-Spin energy that is to be provided by the Resource in response to the Non-Spin deployment.

#### 2.4. Load Resource reserved for Non-Spin

- The QSE will be sent a Resource specific Dispatch Instruction that Non-Spin has been deployed.
- The Dispatch Instruction must include the MW level of Load *energy* to be interrupted by the Load Resource and the estimated duration of the deployment.
- Non-Spin procured from a Load Resource block offer must be deployed as a block.
- The Load Resource must, at a minimum, interrupt not less than 95%, nor more than 150% of the requested deployment energy within 30 minutes of the Dispatch Instruction.

***[Replace Section 2.4 above with the following upon system implementation of NPRR555:]***

#### 2.4 Controllable Load Resource with Non-Spin Ancillary Service Resource Responsibility

- The QSE will be sent a Resource specific Dispatch Instruction that Non-Spin has been deployed.
- The Dispatch Instruction must include the expected amount of capacity that will be available for SCED and the anticipated duration of the deployment.
- The QSE will ensure that the Non-Spin Ancillary Service Schedule telemetry for that Controllable Load Resource has been reduced to zero within 20 minutes of the Dispatch Instruction.
- The QSE must have the Controllable Load Resource's telemetered Resource Status as On-Line (ONRGL and/or ONCLR, whichever is applicable) with an RTM Energy Bid, and the Controllable Load Resource's telemetered net real power consumption must be greater than or equal to the Controllable Load Resource's telemetered LPC plus its total upward Ancillary Service Resource Responsibility.
- ERCOT will automatically calculate new LASL constraints for SCED using the telemetry of the Resource's Non-Spin Ancillary Service Schedule.
- Once the Controllable Load Resource's Non-Spin capacity has been released to SCED, this capacity is Dispatched as any other Resource available to SCED.
- The Controllable Load Resource must, at a minimum, be capable of providing all the Non-Spin energy to SCED within 30 minutes of the Dispatch Instruction.

### 3. Recall of Non-Spin Deployment

Half of the deployed Non-Spin will be recalled when (HASL- Gen) – (30-minute load ramp) > 1000 MW and PRC is > 2800 MW. All of the deployed Non-Spin will be recalled when (HASL- Gen) – (30-minute load ramp) > 1000 MW and PRC is > 3000 MW.

Following the recall of a Non-spin deployment, the following steps should be taken:

- After recall, the QSE will be allowed to use normal shutdown procedures to take the Resource Off-Line if the QSE wants to shut down the Resource. In this case, the Non-Spin Ancillary Service Schedule for that Resource will be reset to equal the Non-Spin Ancillary Service Responsibility for that Resource for that hour. A QSE with a Generation Resource that was previously Off-Line will be allowed to keep the Resource On-Line after the minimum On-Line time, provided that the difference between its HSL and LSL is greater than or equal to its Ancillary Service Resource Responsibility.
- A QSE with a Generation Resource (with an Energy Offer Curve) that will stay On-Line may set the value of the Non-Spin Ancillary Service Schedule equal to the MW amount of Non-Spin that will be provided via power augmentation; otherwise, the QSE will ensure that the value of the Non-Spin Ancillary Service Schedule for that Resource is set to 0 MW.
- A QSE with a DSR Generation Resource (with an Output Schedule) that will stay On-Line will back out the Non-Spin addition that was made to the Output Schedule. This can be incrementally deleted depending on the size of the deployment and Normal Ramp Rate. For non-DSR Generation Resources, SCED will use the QSE submitted non-DSR Output Schedule once the Non-Spin has been recalled.
- A QSE with a Load Resource that has provided Non-Spin will ensure that the Load energy and Non-Spin capability is restored within three hours from the expiration of the Non-Spin deployment. If it is not, the Non-Spin capability must be replaced by the QSE on other Generation or Load Resources capable of providing the service.

If Non-Spin has been deployed in the Houston area to help manage the N\_H Voltage Stability Limit, the deployments will be recalled once reliability margins have been restored to a manageable level.

***[Replace Section 3 above with the following upon system implementation of NPRR555:]***

Half of the deployed Non-Spin will be recalled when (HASL- Gen) – (30-minute load ramp) > 1000 MW and PRC is > 2800 MW. All of the deployed Non-Spin will be recalled when (HASL- Gen) – (30-minute load ramp) > 1000 MW and PRC is > 3000 MW.

Following the recall of a Non-spin deployment, the following steps should be taken:

- After recall, the QSE for a Generation Resource will be allowed to use normal shutdown procedures to take the Generation Resource Off-Line if the QSE wants to shut down the

Resource. In this case, the Non-Spin Ancillary Service Schedule for that Generation Resource will be reset to equal the Non-Spin Ancillary Service Responsibility for that Generation Resource for that hour. A QSE with a Generation Resource that was previously Off-Line will be allowed to keep the Generation Resource On-Line after the minimum On-Line time, provided that the difference between its HSL and LSL is greater than or equal to its Ancillary Service Resource Responsibility.

- A QSE with a Generation Resource (with an Energy Offer Curve) that will stay On-Line may set the value of the Non-Spin Ancillary Service Schedule equal to the MW amount of Non-Spin that will be provided via power augmentation; otherwise, the QSE will ensure that the value of the Non-Spin Ancillary Service Schedule for that Resource is set to 0 MW.
- A QSE with a DSR Generation Resource (with an Output Schedule) that will stay On-Line will back out the Non-Spin addition that was made to the Output Schedule. This can be incrementally deleted depending on the size of the deployment and Normal Ramp Rate. For non-DSR Generation Resources, SCED will use the QSE submitted non-DSR Output Schedule once the Non-Spin has been recalled.
- A QSE with a Controllable Load Resource that has provided Non-Spin will ensure that the Load energy and Non-Spin capability is restored within three hours from the expiration of the Non-Spin deployment. If it is not, the Non-Spin capability must be replaced by the QSE on other Generation or Controllable Load Resources capable of providing the service.

If Non-Spin has been deployed in the Houston area to help manage the N\_H Voltage Stability Limit, the deployments will be recalled once reliability margins have been restored to a manageable level.

#### **4. Non-Spinning Reserve Service Deployment and Recall Procedure Revision Process**

Revisions to the Non-Spinning Reserve Service Deployment and Recall Procedure shall be made according to the approval process as prescribed in Protocol Section 6.5.7.6.2.3, Non-Spinning Reserve Service Deployment.